UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/409,659	09/30/1999	FUJIO OKADA	0250-776	5699

27383 7590 07/09/2003

CLIFFORD CHANCE US LLP
200 PARK AVENUE
NEW YORK, NY 10166

EXAMINER
MISLEH, JUSTIN P

ART UNIT	PAPER NUMBER
2612	8

DATE MAILED: 07/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/409,659	OKADA ET AL.	
	Examiner	Art Unit	
	Justin P Misleh	2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1 - 5 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1 - 5 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 30 September 1999 is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The Examiner suggests comprising the method/process of the invention.

2. The disclosure is objected to because of the following informalities: inconsistency with the drawings. On pages 14 (line 24) and 15 (lines 2 and 5), the second digital video processor (DVP) is labeled 28, however, in figure 1, it is labeled 31. On page 16 (line 10), the applicant states ... *memory 27* ... however, after examination of the specification the Examiner believes, it should be ... *DVP 27*. . On page 23 (line 16), the applicant states ... *DVP 66* ... however, after examination of the specification the Examiner believes, it should be ... *DVP 67*.

Appropriate correction is required.

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet **within the range of 50 to 150 words**. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, **such as "means" and "said," should be avoided**. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Drawings

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 1 (page 10, line 23 and page 22, line 23) and 2 (page 22, lines 2 and 4). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: 21 (figures 1 and 5) and A1/A2 (figure 4). A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1, 2, 4/1, 4/2, 5/1, and 5/2 are rejected under 35 U.S.C. 102(e) as being anticipated by Yamanaka et al.

8. For claim 1, Yamanaka et al. disclose, as shown in figures 1, 2, and 4, and as stated in columns 5 (lines 43 – 67) and 6 (lines 1 – 51), an imaging device comprising:

an imaging element (CCD 15), wherein a plurality of pixels are arranged in a plurality of lines, which is capable of reading out imaging signals captured by means of said pixels, line by line (see column 5, lines 55 – 64);

light exposure controlling means (light source device 13) for alternately repeating steps of exposure and non-exposure of said imaging element to light (see timing diagram of figure 4);

driving means (18, 19 , and 20) for driving said imaging element in such a manner that an imaging signal is output for the pixels in each line of one of either the odd-numbered lines or the even-numbered lines (see column 5, lines 55 – 64), from the pixels in said plurality of lines, for a prescribed time period after said exposure (in figure 4a and 4c), whereupon an imaging signal is output for the pixels in each line of the other of either the odd-numbered lines or the even-numbered lines , before the subsequent exposure (the odd-numbered lines and even-numbered are captured in a single exposure);

first storing means (22) for storing an imaging signal for each of said one group of lines (odd);

second storing means (23) for storing an imaging signal for each of said other group of lines (even); and

sequential scanning means (CPU 25) for obtaining a sequential scan imaging signal by repeatedly reading out the imaging signal for each line stored in said first storing means and the imaging signal for each line stored in second storing means, in alternating sequence (As shown in figure 2, the mixer (24) combines an even-numbered line with a subsequent odd-numbered

line and then combines an odd-numbered line with a subsequent even-numbered line, according to operation under control of the CPU. Therefore, the imaging signals stored in the first storing means and second storing means are read out in an alternating sequence.).

9. For claim 2, Yamanaka et al. disclose, as shown in figures 1, 2, 4, and 10A, and as stated in columns 5 (lines 43 – 67) and 6 (lines 1 – 51), an imaging device comprising:

an imaging element (CCD 15), wherein a plurality of pixels are arranged in a plurality of lines and a plurality of color filters for pixel binning are positioned in units of said pixels (see figure 10A and column 5, lines 48 – 52 and 55 - 64) , which is capable of reading out imaging signals captured by means of said pixels, line by line;

light exposure controlling means (light source device 13) for alternately repeating steps of exposure and non-exposure of said imaging element to light (see timing diagram of figure 4);

driving means (18, 19 , and 20) for driving said imaging element in such a manner that an imaging signal is output for the pixels in each line of one of either the odd-numbered lines or the even-numbered lines (see column 5, lines 55 – 64), from the pixels in said plurality of lines, for a prescribed time period after said exposure (in figure 4a and 4c), whereupon an imaging signal is output for the pixels in each line of the other of either the odd-numbered lines or the even-numbered lines , before the subsequent exposure (the odd-numbered lines and even-numbered are captured in a single exposure);

first storing means (22) for storing an imaging signal for each of said one group of lines (odd);

second storing means (23) for storing an imaging signal for each of said other group of lines (even); and

sequential scanning means (CPU 25 and mixer 24) for obtaining a sequential scan imaging signal by repeatedly using, in alternating sequence, a pixel-binned signal for a first binning line (as shown in figures 2D and 2E), wherein the imaging signal for the pixels of each even-numbered line (figure 2C in second storing means 23) is combined with the imaging signal for the pixels of each subsequent odd-numbered line (figure 2B in first storing means 22) which correspond to the pixels of said even-numbered line (see Odd field in figure 2D), and a pixel-binned signal for a second binning line, wherein the imaging signal for the pixels of each odd-numbered line (figure 2B in first storing means 22) is combined with the imaging signal for the pixels of each subsequent even-numbered line (figure 2C in second storing means 23) which correspond to the pixels of said odd-numbered line (see Even field in figure 2E).

10. As for claims 4/1 and 4/2, Yamanaka et al. disclose, as shown in figures 1, 2, 4, and 10A, and as stated in columns 5 (lines 43 – 67) and 6 (lines 1 – 51), the imaging device further comprising enlargement and reduction processing means (second DVP 28) for implementing enlargement and reduction processing of the image on the basis of said sequential scan imaging signal (see column 6, lines 46 – 52).

11. As for claims 5/1 an 5/2, Yamanaka et al. disclose, as shown in figures 1, 2, 4, and 10A, and as stated in columns 5 (lines 43 – 67) and 6 (lines 1 – 51), the imaging device further comprising scan converting means (29 – 33) for generating a sequential image signal for a personal computer interface, or the like, or an interlaced scan image signal for a TV system or the like, on the basis of said sequential scan imaging signal (see column 6, lines 47 – 61).

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13. Claims 3/1 and 3/1 rejected under 35 U.S.C. 103(a) as being unpatentable over Yamanaka et al.

14. For claims 3/1 and 3/2, Yamanaka et al. disclose, as shown in figures 1, 2, 4, and 10A, and as stated in columns 5 (lines 43 – 67) and 6 (lines 1 – 51) disclose, a second DVP (28) for accepting the sequential scan imaging signal to control of the position of an image, the enlargement of an image, the formation of a mirror imager, etc. However, Yamanaka et al. do not explicitly disclose, outline enhancement processing for implementing outline enhancement processing on the basis of said sequential scan imaging signal. Since, outline enhancement processing provides cleans image edges when viewing still images and can be simply performed with a digital video (signal) processor, one with ordinary skill in the art would have been motivated to also include outline enhancement processing in addition to the enlargement, position control, and mirroring processing functions already performed in the second DVP as taught by Yamanaka et al. Therefore, at the time the invention was made, it would have been obvious to one with ordinary skill in the art, to have also included outline enhancement processing in the second DVP of Yamanaka et al.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

16. Guichard et al. (US 5 365 270) disclose an imaging array which outputs odd-numbered lines and even-numbered lines sequentially or pixel binned odd and even frames in subsequent exposures.

17. Yamanaka et al. (US 5 929 900 and US 6 002 425) disclose an imaging array which outputs odd-numbered lines and even-numbered lines sequentially or pixel binned odd and even frames in single exposures.

18. Takemura (US 4 513 312) disclose color filters for pixel binning.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin P Misleh whose telephone number is 703.305.8090. The examiner can normally be reached on Monday - Friday, 8 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy R Garber can be reached on 703.305.4929. The fax phone numbers for the organization where this application or proceeding is assigned are 703.872.9314 for regular communications and 703.872.9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is 703.306.0377.

JPM
June 27, 2003

WENDY R. GARBER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600